

REMARKS

This application has been carefully reviewed in light of the Office Action dated April 2, 2008. Claims 40, 41, 44, 50, 51, 54, 60, 64 and 65 are in the application. Claims 40 and 50 are the independent claims. Reconsideration and further examination are respectfully requested.

Claims 40, 41, 44, 50, 51, 54, 60, 64 and 65 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,930,553 (Hirst) in view of U.S. Patent No. 5,627,572 (Harrington). Reconsideration and withdrawal of this rejection are respectfully requested.

The present invention generally concerns distributing control software used by an image forming apparatus to an external apparatus via a network. The external apparatus is the image forming apparatus, or an information processing apparatus connected to the image forming apparatus. Production lot information of a consumable unit and operation information indicating a number of prints output or a number of times of jams at the image forming apparatus are received from the external apparatus.

According to one aspect of the invention, control software is selected for distribution from a plurality of control software, depending on whether the operation information indicates an amount exceeding a first predetermined amount or a second predetermined amount which exceeds the first predetermined amount.

According to another aspect of the invention, the updating of the image forming apparatus is performed based on whether or not a print job of the image forming apparatus is in execution.

By virtue of these arrangements, it is ordinarily possible to select control software to compensate for specific conditions of an operating status, and to update using the control software at appropriate timings.

Referring specifically to claim language, independent Claim 40 is directed to a software distributing system for distributing control software used by an image forming apparatus to an external apparatus via a network. The external apparatus is the image forming apparatus or an information processing apparatus connected with the image forming apparatus. The system includes a receiving unit configured to receive, from the external apparatus, production lot information of a consumable unit and operation information indicating a number of prints output or a number of times of jams at the image forming apparatus. The consumable unit is detachably located in the image forming apparatus and includes a plurality of consumable hardware parts for forming an image to a recording medium, and a memory for storing the production lot information of the consumable unit. The production lot information is an identifier which differs according to difference in production condition of the consumable unit, and the production conditions are based on a material and the production environment. The apparatus further includes a selecting unit configured to select the control software based on the production lot information and the operation information received by the receiving unit, and a controller unit configured to distribute the control software selected by the selecting unit to the external apparatus via the network. The selecting unit selects, from a plurality of control software, necessary control software for distribution depending on whether the operation information indicates an amount exceeding a first predetermined amount or a second

predetermined amount which exceeds the first predetermined amount. The distributed control software is used for updating the image forming apparatus by the external apparatus, and the updating is performed based on whether or not a print job of the image forming apparatus is in execution.

The applied art is not seen to disclose or suggest the features of the present invention, and in particular is not seen to disclose or suggest at least the features of (i) selecting control software for distribution from a plurality of control software, depending on whether operation information indicates an amount exceeding a first predetermined amount or a second predetermined amount which exceeds the first predetermined amount, and (ii) performing updating of the image forming apparatus based on whether or not a print job of the image forming apparatus is in execution.

In this regard, page 4 of the Office Action concedes that Hirst fails to disclose selecting necessary control software for distribution from multiple control software, based on whether operation information indicates an amount exceeding a predetermined amount. Applicants submit that it logically follows that Hirst also can not disclose or suggest selecting control software from a plurality of control software depending on whether the operation information indicates an amount exceeding a first predetermined amount or a second predetermined amount which exceeds the first predetermined amount.

Hirst is also not seen to disclose or suggest performing updating of the image forming apparatus based on whether or not a print job of the image forming

apparatus is in execution. Rather, Hirst's updating is based on the timing of replacing the consumable. See Hirst, Column 3, lines 34 to 54.

Harrington is not seen to remedy the above-noted deficiencies of Hirst. As understood by Applicants, Harrington is directed to a printhead maintenance system. Dummy heaters are provided in each printhead as a way of identifying the type of printhead. The printer stores a descriptor record corresponding to each type of printhead, along with maintenance parameters corresponding to the descriptor record. See Harrington, Abstract. In one example, the descriptor record specifies the timing and number of wipes and/or spits necessary for optimum control of the identified type of printhead. See Harrington, Column 2, lines 40 to 63.

Page 4 of the Office Action asserts that Harrington (Column 2, line 51 to 63) discloses selecting control software based on whether operation information indicates an amount exceeding a predetermined amount.

However, Harrington selects descriptor records and corresponding maintenance parameters based on a pattern of heaters of each printhead, rather than an operating status. See Harrington, Column 2, line 51 to 63. Accordingly, Harrington is not seen to disclose or suggest selecting control software based on whether operation information indicates an amount exceeding a predetermined amount at all, much less selecting control software for distribution from a plurality of control software, depending on whether the operation information indicates an amount exceeding a first predetermined amount or a second predetermined amount which exceeds the first predetermined amount.

In addition, Harrington is not seen to disclose or suggest performing updating of the image forming apparatus based on whether or not a print job of the image forming apparatus is in execution. Rather, Harrington senses the heater pattern and chooses a descriptor record when power is turned on, or after a printhead is installed. See Harrington, Abstract and Column 2, lines 50 to 57.

Thus, the applied art is not seen to disclose or suggest at least the features of (i) selecting control software for distribution from a plurality of control software, depending on whether operation information indicates an amount exceeding a first predetermined amount or a second predetermined amount which exceeds the first predetermined amount, and (ii) performing updating of the image forming apparatus based on whether or not a print job of the image forming apparatus is in execution.

Therefore, independent Claims 40 and 50 are believed to be in condition for allowance, and such action is respectfully requested.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.